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REMARKS

Applicants thank the Examiner for the phone interview of July 24, 2006. The contents of that interview are summarized by the remarks below.

Reconsideration of this application is requested. The claims submitted for reconsideration are claims 1 – 15.

Claim 1 is amended in accordance with the Examiner's suggestion.

I. Claims 1 – 15

The rejection of claims 1 – 15 under 35 U.S.C. §102(b) over Brignac, U.S. Patent 6,197,178, is respectfully traversed.

Both the claimed invention and Brignac are directed to methods of activating a catalyst. Step (a) of claim 1 of the claimed invention as amended requires

- a) heating the catalyst to a temperature of about 350 to about 450°F in the presence of hydrogen and hydrogen sulfide, and in the presence of an olefinic naphtha at an effective pressure between 100 and 500 psig; (emphasis added)

Step (a) of claim 8 similarly requires heating in the presence of an olefinic naphtha. In paragraph 0028 of the specification, an olefinic naphtha is defined as a naphtha that comes from a cracked naphtha. The olefin content of these naphthas will typically be above about 5 wt.%, preferably in the range of about 5 to about 50 wt.%, based on the olefinic naphtha stream.

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By contrast, Brignac describes a process for activating a catalyst that requires heating of a catalyst in the presence of a virgin naphtha. At Col. 5, lines 16 – 18, Brignac defines a virgin naphtha as a naphtha that preferably comes directly from a pipe still and thus is not a cracked naphtha from a downstream process unit. As defined in Brignac, virgin naphthas are typically substantially sulfur and olefin free.

Because the claimed invention requires heating in the presence of an olefinic naphtha, as opposed to a virgin naphtha, Brignac fails to disclose all of the elements of the claimed invention. Reconsideration and withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

II. Double Patenting

The rejection of claims 1 – 15 for non-statutory type double-patenting over claims 1 – 5 of Brignac, U.S. Patent 6,197,178, is also respectfully traversed. As an initial matter, both sets of claims are not drawn to the same process, as explained above. Further, Brignac does not describe or suggest the claimed invention, nor would one of ordinary skill in the art be motivated to modify Brignac to arrive at the claimed invention. Additionally, catalyst activated according to the claimed invention unexpectedly shows superior performance as compared to catalyst activated according to Brignac.

A. Brignac does not suggest the use of olefinic naphtha for activation

As noted above, Brignac does not explicitly describe the use of olefinic naphtha for catalyst activation. In fact, Brignac does not provide any suggestion that olefinic naphtha can be substituted for virgin naphtha during catalyst activation.

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Brignac does describe the use of olefinic naphtha for hydrodesulfurization at Col. 3, line 32 – Col. 4, line 67. Brignac further describes tests to determine the effectiveness of catalyst activation in Examples 1 and 2. In these tests, an already activated catalyst is exposed to a cat naphtha feed to determine the activity of the catalyst over time. However, all of the description provided in Brignac for catalyst activation requires the use of virgin naphtha. This corresponds to the invention claimed in Brignac, and no suggestion is provided that cat naphtha (or another olefinic naphtha) can be used instead of virgin naphtha for activation.

B. No motivation existed for those of skill in the art to modify Brignac to arrive at the claimed invention.

Brignac provides no suggestion or motivation to modify the teachings of Brignac to arrive at the claimed invention. Therefore, in order to form a prima facie case of obviousness, a motivation or suggestion to modify Brignac by substituting olefinic naphtha for virgin naphtha would need to be provided either by the nature of the problem to be solved, or by the knowledge of one of ordinary skill in the art. (See *In re Kotzab*, 217 F.3d 1365 (Fed. Cir. 2000); MPEP 2143.01(I).) Neither of these sources provides such a motivation.

The catalysts activated by the claimed invention and in Brignac are catalysts for hydrodesulfurization of a naphtha feed. During hydrodesulfurization, the goal is to remove sulfur while retaining as many olefins as possible. While it is desirable to retain as many olefins as possible, the primary goal of the process is to remove sulfur.

One of the reasons that hydrodesulfurization catalysts are activated prior to use is due to the potential for rapid degradation of the hydrodesulfurization activity

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of the catalyst. As catalysts are exposed to naphtha feeds, the catalysts lose activity over time, eventually becoming irreversibly deactivated. (See paragraph 10 of the specification. Brignac similarly highlights this concern at Col. 2, lines 1 – 13.) Prior to activation, the catalyst is particularly susceptible to deactivation if highly reactive species are present, such as olefins. Thus, the nature of the problem to be solved by the activation step is to prevent active species, such as olefins, from coking or otherwise causing deactivation of the hydrodesulfurization activity.

Conventionally, hydrodesulfurization catalysts were “activated” using an all gas phase process by exposing the catalyst to sour gas (e.g., natural gas containing H₂S). Brignac provides a method that also includes a liquid phase, which is more commercially convenient. Virgin naphtha was selected in Brignac for the activation step in order to avoid introducing olefins to the catalyst prior to activation. Since the nature of the problem to be solved is to prevent olefins and other active species from deactivating the catalyst, one of skill in the art would not be motivated to use an olefin-containing naphtha in place of the virgin naphtha in Brignac. Similarly, the knowledge of one of ordinary skill in the art cannot provide the motivation to modify Brignac, as using olefinic naphtha would be expected to be ineffective for activating a hydrodesulfurization catalyst due to the presence of highly reactive olefins.

Applicants have now discovered that olefinic naphtha can be substituted for virgin naphtha without degradation of catalyst activity. This is an unexpected result in view of the conventionally understood need to activate hydrodesulfurization catalysts prior to exposure to olefins. The fact that applicants discovered the suitability of olefinic naphtha for activation of a hydrodesulfurization catalyst, a finding contrary to accepted wisdom, is itself

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evidence that the claimed invention is not obvious. (See *In re Hedges*, 783 F.2d 1038 (Fed. Cir. 1986); MPEP 2145 (X.D.3).)

C. The performance of the claimed activation process is unexpectedly improved relative to Brignac

In addition to retaining the same hydrodesulfurization activity as the activation method of Brignac, Applicants have also unexpectedly discovered that the claimed activation method reduces the amount of olefin that is saturated during hydrodesulfurization. Examples 1 – 4 in the specification provide a comparison between the activation method of Brignac and the claimed activation method. In each example, the claimed activation method provides similar hydrodesulfurization activity as Brignac, while also providing a reduced level of olefin saturation.

For at least these reasons, the claimed invention is not obvious in view of Brignac. Applicants respectfully request reconsideration and withdrawal of the obviousness type double patenting rejection in view of Brignac.

III. Conclusion

Having demonstrated that all rejections of claims have been overcome, this application is in condition for allowance. Accordingly, applicants request early and favorable reconsideration in the form of a Notice of Allowance.

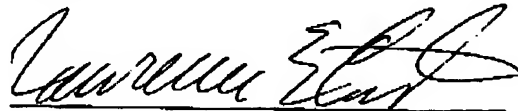
If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated, since this should expedite the prosecution of the application for all concerned.

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If necessary to affect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to affect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1330 (Docket #: JJK-0342).

Respectfully submitted,



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☒ Pursuant to 37 CFR 1.34(a)

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8/17/06